

**REMARKS**

At the outset, Applicants thank the Examiner for the thorough review and consideration of the pending application. The Office Action dated April 7, 2005 has been received and its contents carefully reviewed.

Claims 29 and 114 are hereby amended. Accordingly, claims 1-118 are currently pending, of which claims 8-10, 48-51, 107, and 118 are currently withdrawn from consideration. Reexamination and reconsideration of the pending claims is respectfully requested.

Applicants appreciate the indication of allowable subject matter in claims 22-30, 32-38, 44-47, and 115-117, in addition to the allowance of claims 52-83 and 86-106. Applicants note, however, that claims 115 and 116 were included within the opening paragraph setting forth a provisional obviousness-type double patenting region (but were not specifically addressed within the body of the rejection). Absent any evidence to the contrary, Applicants hereby assume that claims 115 and 116 were not intended to be included within the provisional rejection.

In the Office Action, the Examiner provisionally rejected claims 1-20, 31, and 43 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-118 of copending Application No. 10/661,472 to Lee et al. This provisional rejection is respectfully traversed and reconsideration is requested.

As set forth in M.P.E.P. § 804(II)(B)(1)(a), a sufficient basis for an obviousness-type double patenting rejection is established only when the invention claimed in the application is an obvious variation of an invention claimed in a cited reference. Thus, any analysis supporting an obviousness-type double patenting rejection must parallel the guidelines for analysis of an obviousness rejection under 35 U.S.C. § 103(a) and, therefore, set forth reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim in issue is an obvious variation of the invention defined in a claim in the patent. See M.P.E.P. § 804(II)(B)(1). All determinations of obviousness under 35 U.S.C. § 103(a) require: (1) there be some suggestion or motivation to modify a reference; (2) there be some reasonable expectation of success in modifying the reference; and (3) that all claimed elements be taught or suggested by the reference when modified. See M.P.E.P. § 2143.

Nevertheless, in rejecting claim 1, the Examiner asserts that “[a]lthough the conflicting claims [of the present application and Lee et al.] are not identical, they are not patentably distinct from each other because Claim 1 of the instant invention is an obvious variation of claim 1 of ... [Lee et al.].” Applicants, however, respectfully disagree.

Asserting that claim 1 of the present application is not patentably distinct from claim 1 of Lee et al. because claim 1 of the present application is an obvious variation of claim 1 of Lee et al. fails to satisfy the aforementioned criteria necessary to establish a *prima facie* case of obviousness because such an assertion is circular, conclusory, and fails to set forth any rationale consistent with that required by 35 U.S.C. § 103, on which the Examiner relies in making the provisional rejection. Therefore, Applicants respectfully submit that merely alleging claim 1 of the present application is an obvious variant of claim 1 of Lee et al., without more, is insufficient to support an obviousness-type double patenting rejection. Absent the requisite rationale, Applicants respectfully request withdrawal of the present obviousness-type double patenting rejection of claim 1, and claims 2-20, 31, and 43 which depend from claim 1.

In the Office Action, the Examiner provisionally rejected claims 39-42 and 108-116 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-118 of Lee et al. in view of Jin et al. (U.S. Patent No. 5,979,739). This rejection is respectfully traversed and reconsideration is requested.

Claims 39-42 depend from claim 1 and therefore include each and every element recited therein. As discussed above, the Examiner has failed to establish that claim 1 of the present application is an obvious variation of the claims in Lee et al. The Examiner asserts that Jin et al. teaches elements recited in claims 39-42. Without reaching the merits of this assertion, Applicants respectfully submit that Jin et al. fails to cure the deficiency of Lee et al. as applied to claim 1. Therefore, and in absence of any rationale establishing that claim 1 of the present application is an obvious variation of the claims in Lee et al., Applicants request withdrawal of the present obviousness-type double patenting rejection of claims 39-42.

As mentioned above, a *prima facie* case of obviousness is established when, among other things, each and every claimed element is taught or suggested by the references when combined. See M.P.E.P. § 2143.03.

Rejecting claim 108, the Examiner acknowledges that claim 1 of Lee et al. “is silent as to substrate loaders and correspondence between the loader and the upper stage (i.e., grooves).” Attempting the cure this deficiency, the Examiner relies upon Jin et al. as allegedly disclosing “substrate loaders (item 112) and corresponding grooves (see item 111)” and asserts that it would have been obvious to one of ordinary skill in the art to include “corresponding grooves in a bonding apparatus” because one of ordinary skill in the art would “appreciate that grooves would facilitate quicker loading.”

Nevertheless, Applicants respectfully submit Jin et al. fails to cure the deficiency of Lee et al. with respect to claim 108. Specifically, Jin et al. is silent as to any teaching or suggestion that would lead one of ordinary skill in the art to incorporate the grooves 111 within the lower surface of the upper stage of Lee et al. Moreover, the Examiner has failed to identify any motivation for such a modification. In the absence of any teaching or suggestion from either Lee et al. or Jin et al. to combine the references in a manner that obviates claim 108, and in the absence of any motivation proffered by the Examiner, Applicants submit the Examiner attempts to modify claim 1 of Lee et al. using Jin et al. and arrive at the presently claimed invention only with the benefit of the present claim 108 via impermissible hindsight reasoning. For at least this reason, Applicants respectfully request withdrawal of the present rejection obviousness-type double patenting rejection of claim 108, and of claims 109-111 which depend therefrom.

Rejecting claim 112, the Examiner acknowledges that Lee et al. “does not disclose a substrate loader.” Applicants agree. However, it is respectfully submitted that the Examiner has also failed to establish that Lee et al. discloses the remainder of claim 112 (i.e., wherein the substrate loader includes “at least one finger, wherein an upper surface of a first substrate is fixable to the at least one finger; [and] an upper stage including a lower surface and at least one guiding groove within the lower surface, wherein fingers of the substrate loader are receivable within a respective guiding groove, wherein the upper surface of the first substrate is contactable to the lower surface of the upper stage”). Attempting the cure only the acknowledged deficiency, the Examiner relies upon Jin et al. as allegedly disclosing “a substrate loader with fingers (item 112)” and asserts that it would have been obvious to one of ordinary skill in the art to use “such a finger to achieve better substrate gripping.”

Nevertheless, Applicants respectfully submit Jin et al. fails to cure the deficiency of Lee et al. with respect to what is actually recited in claim 112. Specifically, Jin et al. is silent as to any teaching or suggestion that would lead one of ordinary skill in the art to modify the invention recited in Lee et al. in a manner that provides the structural relationships actually recited in claim 112 (i.e., wherein an upper surface of a first substrate is fixable to the at least one finger; and an upper stage including a lower surface and at least one guiding groove within the lower surface, wherein fingers of the substrate loader are receivable within a respective guiding groove, wherein the upper surface of the first substrate is contactable to the lower surface of the upper stage.) Moreover, the Examiner has failed to identify any motivation for such a modification. In the absence of any teaching or suggestion from either Lee et al. or Jin et al. to combine the references in a manner that obviates claim 112, and in the absence of any motivation proffered by the Examiner, Applicants submit the Examiner attempts to modify Lee et al. using Jin et al. and arrive at the presently claimed invention only with the benefit of the present claim 112 via impermissible hindsight reasoning. For at least this reason, Applicants respectfully request withdrawal of the present rejection obviousness-type double patenting rejection of claim 112, and of claim 113 which depends therefrom.

Rejecting claim 114, the Examiner states “see claims 108, 112, and 113 above,” appearing to imply that claim 114 is merely an aggregate of claims 108, 112, and 113 and, therefore, that claim 114 is satisfactorily rejected on the grounds set forth with respect to claims 108, 112, and 113. Notwithstanding the bases for the rejections of claims 108, 112, and 113, Applicants respectfully submit that elements recited in claim 114 are not recited in any of claims 108, 112, or 113. For example, claim 114 recites “at least one passage arranged within the upper stage and intersecting the lower surface of the upper stage; a suction force transmitter arranged within each passage, the suction force transmitter having a transmission source that is projectable from within the passage to a predetermined distance from the lower surface, wherein a suction force is transmittable the predetermined distance from the lower surface of the upper stage.” Moreover, the Examiner has failed to establish that the cited references, alone or in combination, teach or suggest each and every element recited in claim 114. For at least this reason, Applicants respectfully request withdrawal of the present rejection obviousness-type double patenting rejection of claim 114.

In the Office Action, the Examiner rejected claims 29 and 30 under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants hereby amend claim 29 to more clearly describe that which Applicants regard as the invention and, consequently, respectfully request withdrawal of the present rejection of claim 29, and of claim 30 which depends therefrom, under 35 U.S.C. § 112, second paragraph.

In the Office Action, the Examiner rejected claims 1-7, 31, and 43 under 35 U.S.C. § 102(b) as being allegedly anticipated by Satoshi et al. (JP Patent Pub. No. 2001-356353). This rejection is respectfully traversed and reconsideration is requested.

Rejecting claim 1, the Examiner asserts that Satoshi et al. discloses “first alignment means for leveling the upper stage with respect to the lower stage (load cell 33, and shafts 59, and associated actuators - see Figures 1 and 2), and second alignment for horizontally aligning the upper stage with respect to the lower stage (image recognition camera - see paragraph 0037).” Applicants respectfully disagree.

Satoshi et al. discloses at paragraph [0023]:

... a shaft 29 descends by the motor 40, the electrostatic fixing disc 28 holding top substrate 1b descends, top substrate 1b sticks with bottom substrate 1 on table 9 a, and it has the structure where welding pressure can be given. In this case, a load cell 33 works as a welding-pressure sensor, it is controlling a motor 40 based on the fed-back signal serially, and it is possible to give desired welding pressure to the vertical substrates 1a and 1b.

Moreover, Satoshi et al. discloses at paragraph [0025]:

... when the electrostatic fixing disc 28 is carrying out attraction adsorption, a vacuum chamber is decompressed, attraction adsorption power disappears and top substrate 1b falls, and it is supported by the form hung with the shaft 59 which is in the location of two vertical angles of top substrate 1b, and was extended caudad.

As clearly shown by the actual disclosure cited above, and in view of Figures 1 and 2 of Satoshi et al., Applicants respectfully submit Satoshi et al. fails to teach, expressly or even inherently, “first alignment means for leveling the upper stage with respect to the lower stage,” as asserted by the Examiner.

Further, Satoshi et al. discloses at paragraph [0037]:

... alignment reads the alignment mark prepared in vertical each substrates 1a and 1b with the image recognition camera in the inspection hole prepared in the chamber 21. after omitting a graphic display, measures a location by the image processing, makes each stage 4a thru/or 4c of the XY theta stage T1 move slightly, and performs highly precise alignment.

As clearly shown in Figure 1 of Satoshi et al., each of the structures designated by 4a through 4c are associated with the “lower chamber unit 10.” Thus, Satoshi et al. appears to disclose “alignment means” for horizontally aligning the “lower stage 9” with respect to the “upper stage 28” - not for horizontally aligning the “upper stage 28” with respect to the “lower stage 9,” as would be required for Satoshi et al. to anticipate at least this element as recited in claim 1.

For at least the reasons provided above, Applicants respectfully submit that Satoshi et al. fails to teach, either expressly or inherently, each and every element as recited in claim 1. Consequently, withdrawal of the present rejection of claim 1, and of claims 2-7, 31, and 43 which depend therefrom, is requested.

In the Office Action, the Examiner rejected claims 11-14 and 20 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Satoshi et al. This rejection is respectfully traversed and reconsideration is requested.

Claims 11-14 and 20 depend from claim 1 and, therefore, include all of the elements recited in claim 1. As established above, Satoshi et al. does not anticipate claim 1. Therefore, Applicants respectfully request withdrawal of the present rejection of claims 11-14 and 20 under 35 U.S.C. § 103(a) by virtue of their dependence from claim 1.

Further, and in rejecting claims 11-14, the Examiner asserts that Satoshi et al. discloses “some elements of the [mechanical] arrangements, such as step motors (item 62), connecting shafts (but not whether they are eccentrically connected), adjusting from opposite sides, and rectangular arrangements,” takes Official Notice that “the sensors and mechanical arrangements of the alignment means claimed are well known and convention,” and concludes it

would have been obvious “to have utilized such components in the lower chamber in order to improve apparatus functionality.”

Applicants respectfully submit, however, that none of claims 11-14 recite any of the “mechanical arrangements” cited by the Examiner as being disclosed in Satoshi et al. Absent any evidence that the subject matter of claims 11-14 has been considered in light of Satoshi et al., Applicants respectfully request withdrawal of the rejection of claims 11-14 under 35 U.S.C. § 103(a).

Moreover, and as set forth at M.P.E.P. § 2144.03, it is never appropriate to rely solely on “common knowledge” in the art without evidentiary support in the record, as the principal evidence upon which to base a rejection. Official Notice may only be taken of facts that are of notorious character and serve only to “fill in the gaps” in an insubstantial manner which might exist in the evidentiary showing made to support a particular ground for rejection. Nevertheless, it appears that Official Notice is relied upon as the sole basis for rejecting claims 11-14. By the present Response, Applicants hereby traverse the Official Notice taken by the Examiner and respectfully request the Examiner to provide evidence necessary to establish a *prima facie* case of obviousness, as required by 35 U.S.C. § 103(a), for the modifications asserted above with respect to the apparatus disclosed in Satoshi et al. Absent the requisite documentary evidence, Applicants respectfully request withdrawal of the present rejection of claims 11-14 under 35 U.S.C. § 103(a).

Further, rejecting claim 20, the Examiner asserts that Figures 2 and 3 of Satoshi et al. teach “the use [of] cams, actuators and contacting structures similar to cams (see... items 82, 81, 60, 59, 58, 61 and 62)” and acknowledges that Satoshi et al. “does not disclose restoring means, such as a coil spring.” The Examiner attempts to cure the alleged deficiency of Satoshi et al. by taking Official Notice that “such structures are well known and conventional conventional structures for ensure proper mechanical functionality of the alignment structures.

Preliminarily, Applicants respectfully submit that the Examiner attempts to unduly narrow the scope of claim 20, implying that the restoring means is a coil spring because a coil spring is not recited in claim 20. Moreover, and for similar reasons as discussed above with respect to claims 11-14, Applicants hereby traverse the Official Notice taken by the Examiner

and respectfully request the Examiner to provide documentary evidence establishing *prima facie* obviousness, as required by 35 U.S.C. § 103(a), for the modifications asserted above with respect to the apparatus disclosed in Satoshi et al. Absent the requisite documentary evidence, Applicants respectfully request withdrawal of the present rejection of claim 20 under 35 U.S.C. § 103(a).

Further, Applicants respectfully submit that the nature of “gaps” in Satoshi et al., with respect to the elements recited in claim 20, are not insubstantial. To the contrary, and regardless of any documentary evidence that may be found, modifying Satoshi et al. as suggested by the Examiner would both render the apparatus of Satoshi et al. unsatisfactory for its intended purpose and change its principle of operation. For at least this additional reason, Applicants respectfully request withdrawal of the present rejection of claim 20 under 35 U.S.C. § 103(a).

In the Office Action, the Examiner rejected claims 15-19 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Satoshi et al. in view of Miwa et al. (U.S. Patent No. 5,766,407). This rejection is respectfully traversed and reconsideration is requested.

Claims 15-19 depend from claim 1 and, therefore, include all of the elements recited in claim 1. As established above, Satoshi et al. does not anticipate claim 1. Moreover, Miwa et al. fails to cure the deficiency of Satoshi et al. with respect to claim 1. Because none of the cited references, including Satoshi et al. and Miwa et al., singly or in combination, teach or suggest each and every element recited in claim 1, Applicants respectfully submit the Examiner has failed to establish that claims 15-19 are *prima facie* obvious under 35 U.S.C. § 103(a). For at least this reason, Applicants respectfully request withdrawal of the present rejection of claims 15-19 under 35 U.S.C. § 103(a).

In the Office Action, the Examiner rejected claims 39-42 and 108-114 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Satoshi et al. in view of Jin et al. (U.S. Patent No. 5,766,407). This rejection is respectfully traversed and reconsideration is requested.

Claims 39-42 depend from claim 1 and, therefore, include all of the elements recited in claim 1. As established above, Satoshi et al. does not anticipate claim 1. Moreover, Jin et al. fails to cure the deficiency of Satoshi et al. with respect to claim 1. Because none of the cited



references, including Satoshi et al. and Jin et al., singly or in combination, teach or suggest each and every element recited in claim 1, Applicants respectfully submit the Examiner has failed to establish that claims 39-42 are *prima facie* obvious under 35 U.S.C. § 103(a). For at least this reason, Applicants respectfully request withdrawal of the present rejection of claims 39-42 under 35 U.S.C. § 103(a).

The basis of the present rejection of claims 108-114 under 35 U.S.C. § 103(a) is identical to the basis of the rejection of claims 108-114 under obviousness-type double patenting save for the substitution of Satoshi et al. for Lee et al. Therefore, Applicants respectfully submit that the remarks provided above with respect to the obviousness-type double patenting rejection of claims 108-114 are equally applicable to the present rejection under 35 U.S.C. § 103(a).

Applicants believe the foregoing amendments and remarks place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

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